

Magnitude of Wide Companion of ζ Lyrae.

By the Rev. S. J. Johnson, M.A.

In the case of this wide object, almost one suitable for the binocular, the impressions recorded of magnitude seem singularly discordant; and if these estimations have been made with care, they seem to suggest the idea of variability with a long period.

In the *Intellectual Observer*, 1862 December, the Rev. T. Webb says, "In 1850.77 and 1865.68 with $3\frac{7}{16}$ inches, I thought the smaller star 7 and 6. It now appears as in Smyth," that is to say, magnitudes 5, $5\frac{1}{2}$.

In 1876 Plummer gives 4, $6\frac{1}{2}$, an immense difference between the components.

Even in so trustworthy a work as the *Washington Observations of Double Stars, made at the U.S. Naval Observatory*, Part ii., 1880-1891, they are given as "4 and 6."

The following are extracts from my own notes:—

"1884 September 19. Mags. 5, 6, nearly, if not quite, a whole magnitude difference. Colours, yellow, brownish-yellow.

"1887 October 10. Mags. 5, 6. Yellow, lilac-tint.

"1891 January 21. Yellow, bluish. Mags. 5, 6, or more strictly speaking, not above $\frac{3}{4}$ magn. difference.

"1897 May 21. Barely $\frac{1}{2}$ magnitude difference in the stars, the smaller somewhat bluish."

And on November 15 this year, 1900, the same impression: mags. 5, $5\frac{1}{3}$.

The fact that I know of no list of variables in which this star is included seems to make it worth while to remark on the matter.

Melplash Vicarage, Bridport:

December 10.

Observations of the Leonid Meteors of 1900 made at the Royal Observatory, Greenwich.

(Communicated by the Astronomer Royal.)

On the night of November 13-14 twenty-five meteors were observed by three observers between midnight and 5^h A.M., five of which were Leonids. The watch was occasionally interrupted by cloud. On the night of November 14-15 the effective watch was limited to two hours only (the sky clouding up completely before 3^h A.M.), and twenty meteors, of which six were Leonids, were seen by two observers. On the night of November 15-16 a watch was maintained by three observers from 11^h P.M. until 3^h 30^m A.M. (when the sky became overcast), and fifty-five meteors were observed, twenty-three of which were conformable to the *Leo* radiant. There was no appearance of a shower on any of the nights of observation.

Royal Observatory, Greenwich:

1900 December 29.

The Leonids 1900: Observations at the University Observatory, Oxford. By H. H. Turner, M.A., F.R.S., Savilian Professor.

Continuous watch was kept on the nights of November 13, 14, 15, with practically no result. On November 13 the sky clouded over at 16^h 35^m; on November 14, at 13^h 20^m; and on November 15 at about 13^h 30^m, though there was a partial clearance about 15^h–16^h. On November 14 about eleven meteors were noticed between the hours of 11^h 30^m and 14^h, none of them *Leonids*; but no special attention was paid to these observations, the watch being kept simply for a notable display. Several cameras were ready for exposures, but of course no results were obtained.

The Leonids, 1900. Observations made at the Radcliffe Observatory, Oxford.

(Communicated by the Radcliffe Observer.)

In anticipation of a return of the Leonids this November, arrangements were made for observations, and, in view of the possibility of a dense swarm occurring, an electric cable had been laid from the tower to the chronograph, and a mechanical enumerator was also provided.

On November 11 and 12 an examination of the sky was made at intervals, but the observers failed to detect any Leonids. Much cloud prevailed.

On the night of November 13 Mr. McClellan undertook the watch from 11^h to 14^h 30^m, when he was relieved by Mr. Wickham, who remained on duty till dawn.

On November 14 Mr. Robinson kept watch during the whole period from 11^h till dawn.

It was further arranged that Mr. Jenkins, who slept during these two nights at the Observatory, should, in the event of a shower of meteors, be sent to summon the Radcliffe Observer and the other members of the staff.

The observers on duty report as follows :—

Mr. McClellan.—November 13, 11^h 30^m to 14^h 30^m G.M.T. The sky was very variable, being often covered with quickly moving cloud, whilst in the East thin clouds, which remained almost stationary, concealed the radiant until 14^h; after this the "Sickle" could be seen through breaks in drift.

At 13^h 30^m a sporadic meteor crossed the constellation of Orion from E. to W. with a swift motion.

Mr. Wickham.—November 13, 14^h 30^m to 15^h 15^m. The sky was sufficiently clear to identify all my reference stars, except those below the 4th magnitude, which were invisible, the Moon being near the radiant in the constellation *Leo*. The haze near